

Eighth Grade Math Pacing Guide, 2011– 2012

	September	October	November	December	January	February	March	April	May	June
Week 1	Students are in session Thursday & Friday only. Supply list are handed out. Diagonstic & Placement Tests	Topic: -Adding and subtracting Polynomials with integer coefficients 8.A.7 POW Weekly Assessment	Benchmark Qtr.2 Topic: -Review finding the GCF -Factor Algebraic expressions using the GCF 7.N.8 8.A.10 POW Weekly Assessment	Topic: -Solving One-Step Equations Using Addition -Solving One-Step Equations Using Subtraction (Use Vertical Method for both addition & subtraction) -Solving One-Step Equations Using Multiplication -Solving One Step Equations Using Division To differentiate use algebra tiles. 8.PS.6 8.R.1 POW Weekly Assessment	Topic: -Translate verbal sentences into algebraic inequalities -Graph the solution set of an inequality on a number line -Solve inequalities by using the addition or subtraction properties of inequality -Solve inequalities by using the multiplication or division properties of inequality 8.A.1 8.A.13 8.A.14 8.G.19 POW Weekly Assesement	Benchmark Q2 Topic: -Write an equation to represent a function from a table of values -Determine the slope of a line from a graph and explain the meaning of slope as a constant rate of change -Determine the y-intercept of a line from a graph and be able to explain the y-intercept 8.G.14 8.G.13 7.A.10 POW Weekly Assessment	Topic: -Distinguish between linear and non-linear equations $ax^2 + bx + c$; $a=1$ (only graphically) -Recognize the characteristics of quadratics in tables, graphs, equations, and situations 8.G.20 8.G.21 POW Weekly Assessment	Benchmark Q4 Topic: -Estimate a percent of quantity, given an application -Justify the reasonableness of an answer using estimation -Solve equations/Proportions to convert to equivalent measurements within metric and customary measurement systems 8.N.5 8.N.6 8.M.1 POW Weekly Assessment	Topic: -Define and use correct terminology when referring to function(domain and range) -Determine if a relationship is a function 8.A.17 8.A.18 POW Weekly Assessment	Topic: -Write an equation of a line parallel to the x or y axis-Continued -Determine if two lines are parallel given the equation in any form AA36 AA38 POW Weekly Assessment

Week 2	Topic: Review of 7th grade Topics -Addition of Integers -Subtraction of Integers 7.N.12 7.N.13 Problem of the Week Weekly Assessment	Topic: -Multiplying Monomials -Dividing Monomials -Divide a Polynomial by a Monomial 8.A.6 8.A.9 8.N.1 POW Weekly Assessment	Topic: -Factoring a Trinomial in the form of $ax^2 + bx + c$ ($a \neq 1$ and c can not have more than 3 sets of factors) 8.A.11 POW Weekly Assessment	Topic: -Review Simplifying Algebraic Expressions using distributive property and combining like terms. -Solving Two Step Equations 8.PS.6 8.PS.3 8.A.2 7.A.4 POW Weekly Assessment	Topic: -Solve multi-step inequalities and graph the solution set on a number line -Solve linear inequalities by combining like terms, using the distributive property or moving variables to one side of the inequality (include multi. or division of inequalities by a negative number) 8.A.13 8.A.14 8.G.19 POW Weekly Assessment	Topic: -Graph a line using a table of values -Determine the equation of a line given the slope and the y-intercept -Understand that numerical information can be represented in multiple ways 8.G.15 8.G.16 8.A.15 POW Weekly Assessment	Topic: Transformational Geometry -Describe and identify transformations in the plane, using proper function notation(rotation, reflections, translations, and dilations) -Draw the image of a figure under rotations of 90 and 180 degrees -Draw image of a figure under a reflection of a given line 8.G.7 8.G.8 8.G.9 Pow Weekly assessment	Spring Break Spring Break Pack on Acuity	Topic: -Interpret multiple representations using equation, table of values, and graphs 8.A.19	Topic : - Identify and graph linear, quadratic, absolute value and exponential functions AG4 POW Weekly Assessment
--------	--	--	--	--	---	--	---	---	---	--

Week 3	Topic: -Multiplication of Integers -Division of Integers opic: -Develop the Laws of Exponents for multiplication and division 7.N.4 8.N.1 7.N.12 POW Weekly Assessment	Topic: -Applying the laws of exponents to monomials Review of 1st Qtr 8.N.1 Quartely Exam Administered 1st Qtr. Topics Assessed	*Thanksgiving Week* Vacation Packets Continued Topic: -Factoring a Trinomial in the form of $ax^2 + bx + c$ (a =1 and c can not have more than 3 sets of factors) -Show Foil Method 8.A.11 POW Weekly Assessemnt	Topic: Solve multi-step equations by combining like terms, using the distributive property, or moving variables to one side of the equation 7.A.4 8.CN.4 POW Weekly Assessemnt	Mid -Winter Break Winter Break Packet on Acuity	Topic: Identify pairs of vertical angles as congruent Identify pairs of supplementary and complementary angles Calculate the missing angle in a complimentary and supplimentary pair Calculate the missing angle measurements when given two intersecting lines and an angle 8.G.1 8.G.2 8..G.3 8.G.6 POW Weekly Assessment	Topic: -Draw the image of a figure under trasnlation -Draw the image of a figure under dilation -Identify the properties preserved and not preserved under a reflection,rotation,tran slation,and dilation 8.G.10 8.G.11 8.G.12 POW Weekly Assessment	Topic: Review for NYS Post 7th Grade topics as well -Calculate distance using a map scale -calculate unit price using proportions -compare unit prices -Convert money between different currencies 7.M.1 7.M.5 7.M.6 7.M.7 REVIEW WEEK	Topic: -Write an equation of a line parallel to the x or y axis -System of Equations Graphing and solving AA36 AA38 POW Weekly Assessment	Topic: Find the roots of a parabolic function AG8 Topic: -Construct the following, using a straight edge and a compass: Segment congruent to a segment Angle congruent to an angle Perpendicular bisector Angle bisector 8.G.0 POW Weekly Assessment FINAL ASSESSMENT

Resources	<div>-Coach Book</div> <div>-Impact course 3</div> <div>-Quick Review - Handbook</div> <div>-Math Connects Course 3</div> <div>-Resource Masters</div>			<div>see UBd unit on equations posted in our wiki</div> <div>School Wiki</div>						
Technology	Examview	<div>glencoe.com</div> <div>iteachiilearn-compass learning</div> <div>TeacherWorks</div>	<div>glencoe.com</div> <div>iteachiilearn-compass learning</div> <div>Teacher Works</div>	<div>Compass learning lesson-video</div> <div>Teacher Works</div>	<div>Examview Compass Learning</div> <div>glencoe.com</div> <div>Teacher Works</div>	<div>Examview Compass Learning</div> <div>glencoe.com</div> <div>Teacher Works</div> <div>Acuity Online</div> <div>ilearn nyc-compass learning</div>	<div>Examview Compass Learning</div> <div>glencoe.com</div> <div>Teacher Works</div> <div>Acuity Online</div> <div>ilearn nyc-compass learning</div>	<div>Examview Compass Learning</div> <div>glencoe.com</div> <div>Teacher Works</div> <div>Acuity Online</div> <div>ilearn nyc-compass learning</div>	<div>Examview Compass Learning</div> <div>glencoe.com</div> <div>Teacher Works</div> <div>Acuity Online</div> <div>ilearn nyc-compass learning</div>	<div>Examview Compass Learning</div> <div>glencoe.com</div> <div>Teacher Works</div> <div>Acuity Online</div> <div>ilearn nyc-compass learning</div>

Differentiated Instruction ELL SN SS	<p>Instructional Modifications</p> <p>-Use visuals</p> <p>“hands-on” manipulatives(Co unters)</p> <p>Assessment Modifications-</p> <p>-Time & ½</p> <p>-Double Time</p> <p>Foldables Student Built Glossarry</p>	<p>Use after the exercises.</p> <p>Have students describe two or three things about this lesson that they found difficult to understand. Then have them address each item by writing explanations that will help them review the material later</p> <p>Assessment Modifications-</p> <p>-Time & ½</p> <p>-Double Time</p> <p>Foldables Student Built Glossarry</p>	<p>Plan ways for ELLs to participate in class and in cooperative learning groups.</p> <p>Assessment Modifications-</p> <p>Give open-book test.</p> <p>-Time & ½</p> <p>-Double Time</p> <p>Provide concrete “real” examples and experiences-area of a polygon</p> <p>Foldables Student Built Glossarry</p>	<p>Building Vocabulary</p> <p>Many students would benefit from a chart listing some key words and phrases that indicate the four operations.</p> <p>plus ,sum,total increased by, in all,more than, minus, less,less than, subtract, decreased by, difference, product ,multiplied, each of,divided by, quotient per rate</p> <p>Foldables Student Built Glossarry</p>	<p>Building Vocabulary</p> <p>Have students create an inequality table were the words are associated with the corresponding sign. When solving inequalities with fractions, it is common for students to take only one approach to problem solving. Have students solve problems by finding least common denominators, by multiplying each side of the equation by the least common denominator and by cross multiplication.</p> <p>Foldables Student Built Glossarry</p>	<p>Peer Discussions</p> <p>Use with the exercises.</p> <p>ELL students can benefit from listening and participating in discussions with peers. Have students work in small groups to discuss their answers to the in-class exercises. The material of this lesson is often familiar to students, therefore being confident with the mathematics content, ELL students can work on their language skills.</p> <p>Kinesthetic Learners Have students make a large 12-by-12 grid on the floor using masking tape. Each cell should be at least 30 centimeters wide. Draw a large “O” on an index card and place it at the origin. Indicate the axes using the tape. Write the equation $y = 2x + 3$ on the board. Have students stand at intersections of the cells to indicate points on this line. They should notice that their positions form a straight line.</p>	<p>Naturalist Learners</p> <p>Use after presenting the examples.</p> <p>Ask students to think about symmetry in nature.</p> <ul style="list-style-type: none">• Have them sketch a plant or animal that shows symmetry. The drawings should include lines of symmetry. Allow class time for students to explain the symmetry in their drawings. <p>-Bring in newspaper clippings of % sales and discuss with students different strategies of determining the % off of a product using the 10%rule</p> <p>Foldables Student Built Glossarry</p>	<p>Vocabulary Development</p> <p>Use with Exercises 17–21.</p> <p>The vocabulary words of this lesson are difficult for English language learners and struggling students because all the terms are related. Create a table like the one below. Work through the first one with students. Reinforcing how ratios, rates, and unit rates are related help practice vocabulary as well as make connections.</p> <p>Example:</p> <p>Ratio: 153/18</p> <p>Rate: 153points/ 18game</p> <p>Unit Rate:8.5 points per game</p> <p>Foldables Student Built Glossarry</p>	<p>Make sure students understand that a function is linear only if:</p> <ul style="list-style-type: none">• its equation can be written in the form $y = mx + b$;• the table for the function shows a constant difference between consecutive x-values and between consecutive corresponding y-values. <p>Otherwise, the function is nonlinear.</p> <p>Remind students that they may have to convert equations like $4y - 3 = 12x$ into slope-intercept form before they can recognize them as linear. For practice, have them write the equations in non slope intercept form</p> <p>Some students may have trouble after they have plotted some of the points. Encourage them to memorize the basic shapes of the different types of functions. You may wish to have them keep a list in their math journals showing types of graphs and corresponding functions.</p> <p>Foldables Student Built Glossarry</p>	<p>Reviewing Concepts</p> <p>Use before presenting the examples.</p> <p>Students may mistakenly think that only equations written in slope-intercept form, $y = mx + b$, are linear equations. They may have to convert equations like $4y - 3 = 12x$ into the slope-intercept form before they can recognize them as linear. For practice, have them write the equations in non slope intercept form</p> <p>Some students may have trouble after they have plotted some of the points. Encourage them to memorize the basic shapes of the different types of functions. You may wish to have them keep a list in their math journals showing types of graphs and corresponding functions.</p> <p>Foldables Student Built Glossarry</p>
---	--	--	--	--	---	---	--	--	--	--

						Repeat the activity using other equations. Foldables Student Built Glossary				
AL	Some students may have difficulty translating words into algebraic expressions. Pair weaker students with stronger ones. •Have each student write a verbal expression, then trade and translate the expression into an algebraic expression.	Use with multi. monomials Lesson 10-5 Enrichment Polynomials and Volume.	Find area of a polygon using variables	Have students create there own algebraic equation involving two operations-in the writing equation lesson of the week	Extending the Concept Explain that when you add or subtract the same number from each side of an inequality, the inequality also remains true	Have students work in pairs to write word problems that can be expressed as functions with two variables. Students can exchange problems with other pairs and write the functions that represent the problems.	Extending the Concept Use after presenting the lesson. The capital A has a vertical line of symmetry. The capital letter E has a horizontal line of symmetry. The word MATH has a vertical line of symmetry, as shown at the right. Have students find words or names that are vertically or horizontally symmetric. -Have students figure out why 20% off of something is the same as finding 80% of the price.	Reviewing Concepts Write a simple fraction like 3/4 on the board and ask students to name other fractions that could form a proportion with it. Then write the proportions on the board.	Logical Learners Have students work in small groups to discuss how the sign of a, the coefficient of x^2 , affects the graph of $y=ax^2+c$ and how the sign of c, the constant, affects the graph. Then ask them how the graph would change if they interchanged x and y. Would the resulting graph be the graph of a function?	Place students in small groups. Since there are different tasks involved with graphing quadratic functions, have the group members decide which of the tasks each person should complete to help the group graph the function. Once each group has graphed a quadratic funtion, have them switch roles and graph another function.

Standards are listed under each initial topic heading.
Memory and Reasoning Standards are not listed because they spiral throughout the lessons.

Note: M = Monday, T = Tuesday, W = Wednesday, Th = Thursday, F = Friday
Note: ELL= English Language Learners AL= Above or Beyond Grade Level SS= Struggling Students SN= Special Needs